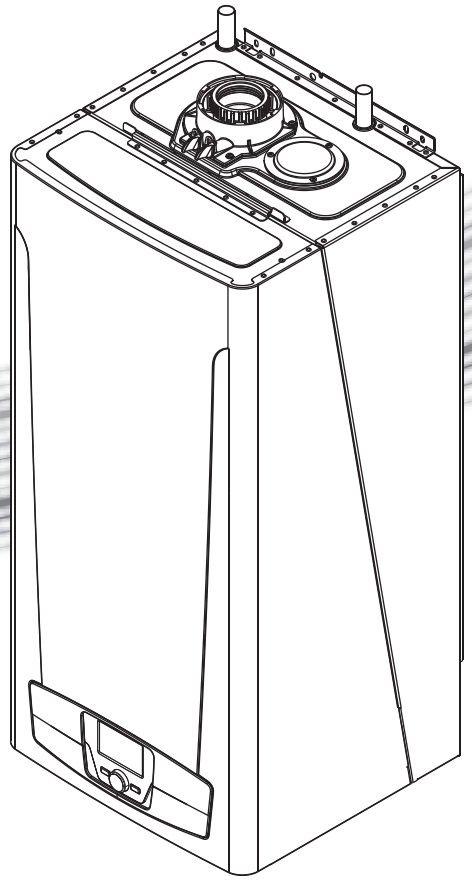
BAXI

User's Operating Instructions &
Important Warranty Information



Ecogen 24/1.0

Gas Fired Wall Mounted Condensing Boiler
and Power Generator

Please keep these instructions in a safe place.
If you move house, please hand them over to the next occupier.

Natural Gas	Propane
Baxi Ecogen 24/1.0 G.C.N° 41 075 60	Baxi Ecogen 24/1.0 LPG G.C.N° 41 075 64

This appliance contains a small scale embedded generator (SSEG). Both the District Network Operator and the Electricity Provider must be informed, this is a legal requirement - see section 13.3.

This appliance contains a pressure vessel filled with Helium to 23 bar.
Do not strike, drop, drill or puncture the vessel.
Do not unbolt any of the covers or flanges.
The vessel contains no user serviceable parts.
Dispose of safely.

Anti-Legionella Function

If the DHW cylinder has been fitted with a control sensor instead of a thermostat for increased efficiency, the control will recognise this and automatically initiate an anti-legionella function. In this case the user should be aware that once a week the DHW set point is overridden and the cylinder is heated to 65° C for 10 minutes. The default time for this action is monday 8am every week.

If the DHW set point has been reduced from 65° C for safety reasons, the users must be aware that the temperature around this time will be much hotter than usual. The time of the function may be altered or the action disabled see section 7.6.

The Benchmark Scheme

Baxi Heating UK Ltd is a licensed member of the Benchmark Scheme which aims to improve the standards of installation and commissioning of domestic heating and hot water systems in the UK and to encourage regular servicing to optimise safety, efficiency and performance.

Benchmark is managed and promoted by the Heating and Hotwater Industry Council. For more information visit **www.centralheating.co.uk**

CE 0086

benchmark
COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

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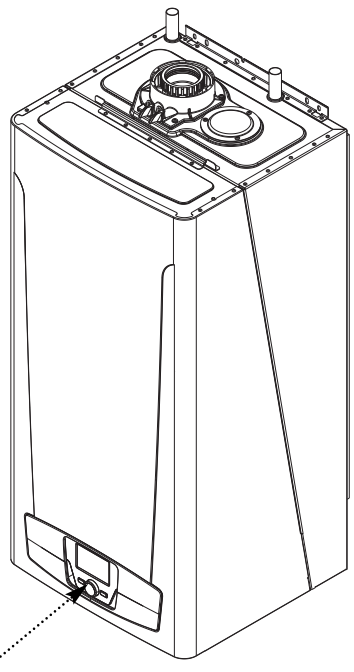
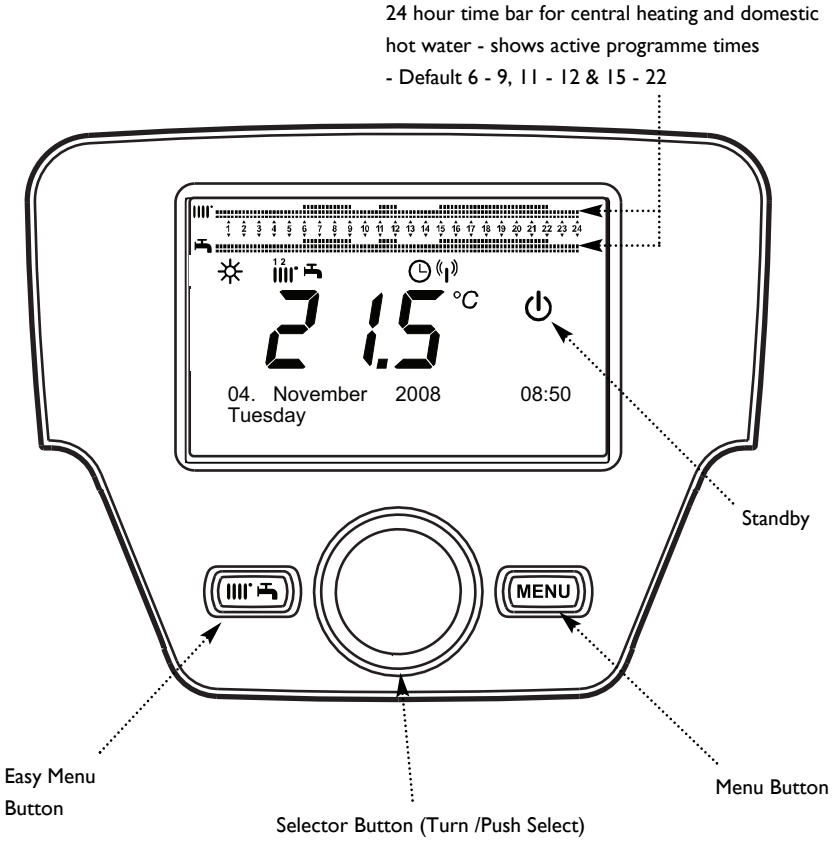
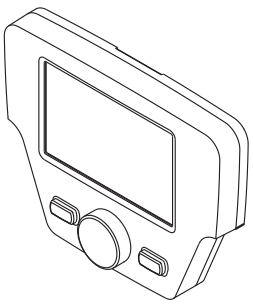


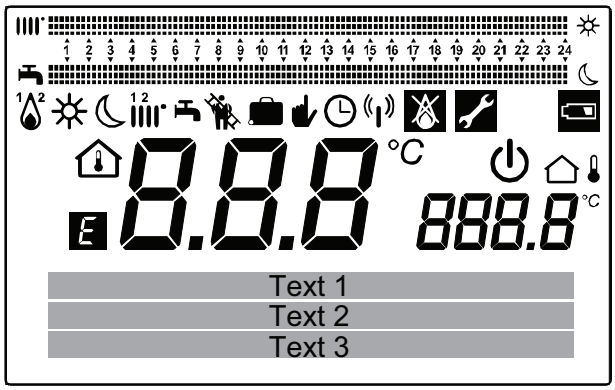
Boiler Controls - see opposite page for Operating Quick Reference Guide

1.0 Quick Reference Guide

THINK Controller







Display showing all available segments

The Easy Menu Button

Commonly required functions are available more quickly via the Easy Menu Button. To access, press the Easy Menu Button and turn the Selector Button to scroll through, confirm your selection by pressing the Selector Button.

Commonly required functions are shown in order below: -

1. **Standby/operation** - the on/off switch - in the off mode frost protection for the appliance is active: displays ⏻ when in standby.

2. **Hot water boost** - The domestic hot water is heated to the required temperature once.

3. **Central heating mode CH1** - easy access to change the operating mode see Section 7.1

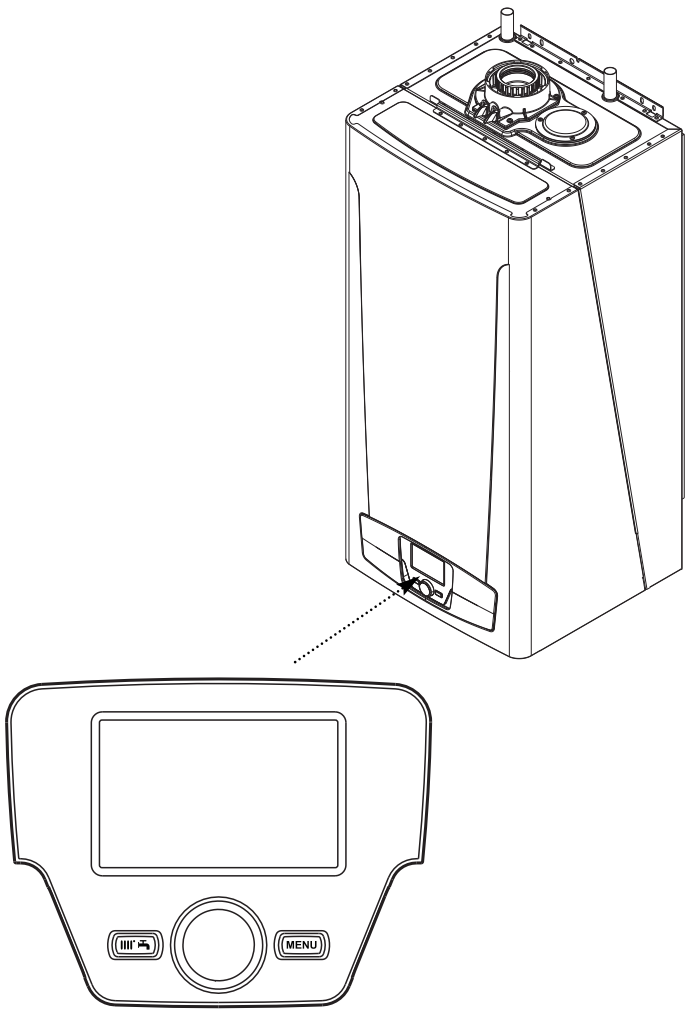
4. **Room temperature CH1** - The central heating setpoint temperature can be altered permanently.

5. **Hot water mode** - easy access to change the operating mode see Section 7.4

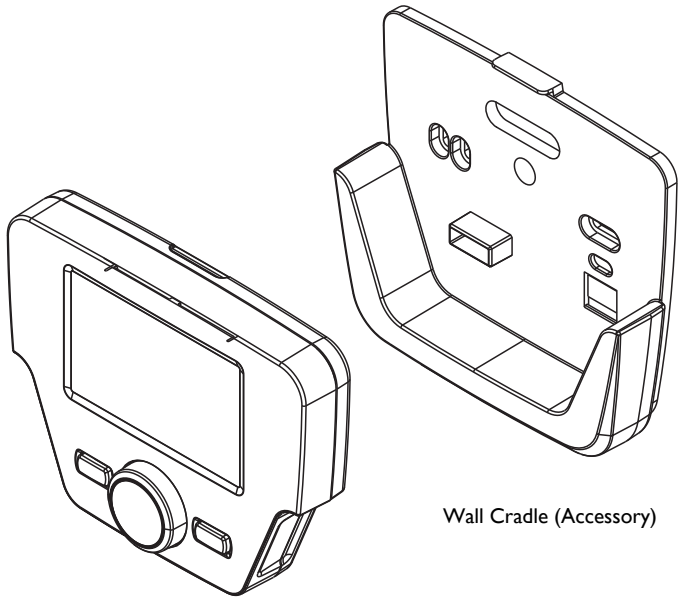
6. **Hot water temp setpoint** - The hot water setpoint temperature can be altered permanently as long as a tank sensor is fitted. If no sensor is fitted --- appears.

Display Descriptions

- Burner in Operation 1 - Engine 2 - Supplementary
- Heating to the Room temperature Set Point
- Heating to the Reduced Set Point
- Central Heating Times Active
- DHW Time Active
- Combustion Check Function Active
- Holiday Function Active
- Manual Overide - Time Switch Function Overridden
- Time Switch Function Active
- Wireless Communication Established
- THINK Controller Configured as a Room Sensor
- Error Message
- Standby - Appliance ON/OFF (OFF = Frost Protection)
- Outdoor Sensor Connected
- System / Appliance Attention Required
- Maintenance / Special Mode
- Change Battery (only if wireless control fitted)



THINK Controller



Wall Cradle (Accessory)

THINK Controller

2.0 Introduction

2.1 Description

1. The appliance incorporates a Stirling engine which is capable of generating between 0.4 – 1.0 kW of electrical power depending on the running conditions of the heating system. High return temperatures especially above 65°C will reduce the power generation. It is therefore in the interests of the householder to ensure that the central heating system is maintained and working as efficiently as possible. Balance the radiators in the central heating system so that there is suitable drop in temperature across each radiator. 20°C is optimum for new systems but some older radiators originally installed with non condensing appliances may only manage 11°C. An increase in the noise level during connection of the generator to the grid is normal and should be expected.

2. The use of an THINK Controller incorporating a room sensor (as opposed to a room thermostat) will also improve the power generation.

3. If the return temperature to the appliance gets too hot the engine burner will switch off to protect the engine – in this case the supplementary burner will light on its own until the return temperature has cooled sufficiently and the engine burner will be enabled again.

4. If the electricity generated is not consumed directly by the user, it is fed back into the grid. Arrangements can be made with the electricity provider to compensate the householder by way of a feed-in tariff. See section 13.3.

5. It is your responsibility to contact your electricity supplier and inform them that you have installed a Baxi Ecogen which will generate electricity. This is a legal requirement (see Section 13.3).

6. Operation and control is similar to a domestic boiler and is fully automatic.

7. All interactions with the appliance are through the removable THINK Controller mounted either on the front of the appliance or on a remote wall cradle.

2.2 Important Notes

1. Read and follow these instructions thoroughly before switching on and operating this appliance. These instructions must be followed and warning labels must be adhered to.

2. As with any domestic boiler, flammable materials **MUST NOT** be placed near this appliance and materials emitting flammable vapours must not be stored in the same room.

Do not position a kettle or toaster directly below the appliance.

3. The appliance **MUST NOT** be tampered with, abused or any sealed components adjusted as this may result in a hazardous situation.

4. Please note that because of the high efficiency of the appliance, condensate (water) is produced from the flue gases. A condensate 'plume' (water vapour) may also be seen coming out of the flue.

Gas Connection

5. Your Baxi Ecogen appliance has been installed by a Gas Safe registered installer– this is both good safe working practice and complies with the current gas safety regulations.

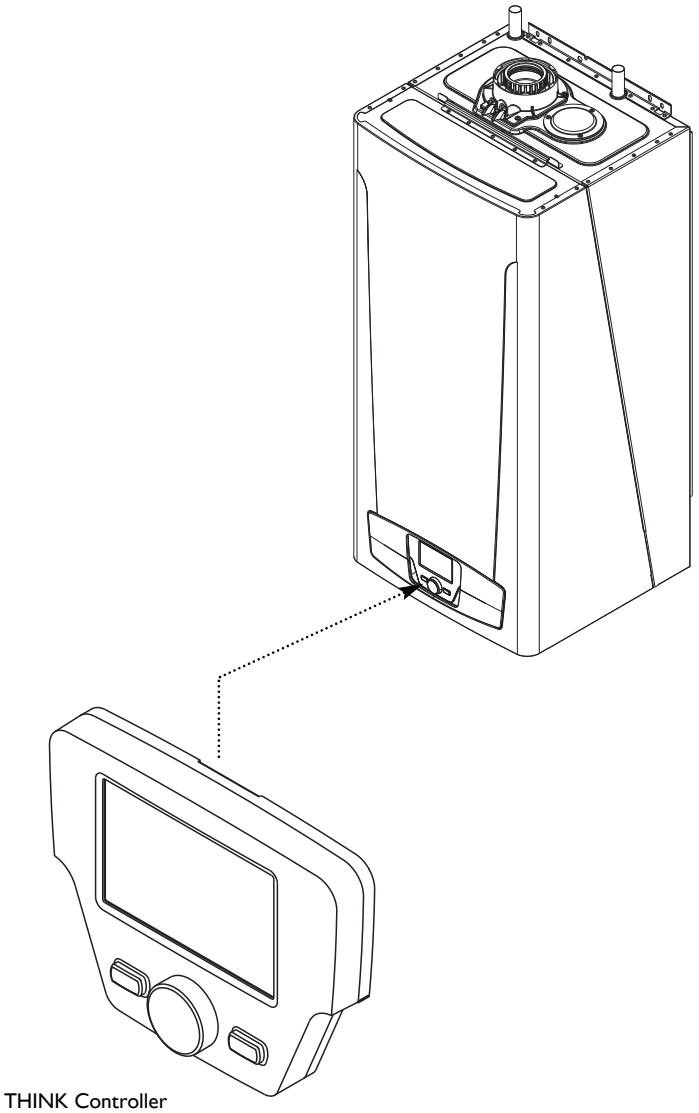
Electrical Connection

6. Your Baxi Ecogen appliance has been installed in accordance with the Installation Instructions, this means that:
The appliance has been earthed.
The electricity supply to the appliance is 230V ~ 50Hz.

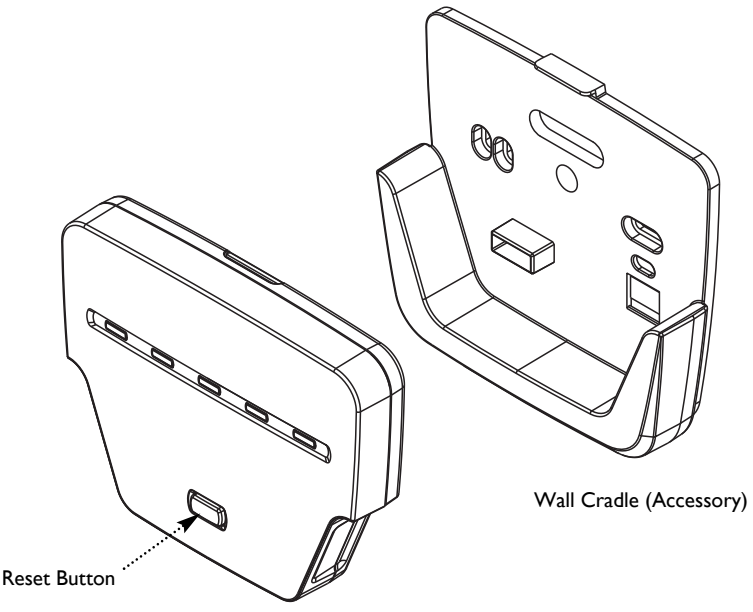
7. Connection to the electricity supply has been made in a way that allows complete isolation of the electricity supply from the appliance. The isolation switch is located in an accessible position within your installation.

8. It is a legal requirement that both the Distribution Network Operator (DNO) and the electricity provider are informed of the installation of this appliance - **see section 13.3.**

NOTE: In the event of a power failure the appliance will turn off automatically and will not restart for at least 3 minutes after the power supply has been restored.



THINK Controller



Wall Cradle (Accessory)

5 LED Receiver

3.0 The Programmers

3.1 Getting Started

1. Ensure that both gas and electricity are turned on to the appliance.

2. The Gas Safe registered installer will have set-up the appliance to a programme of your choice and it should be providing heat and hot water in line with your requirements. These can be altered via the THINK Controller. Section 5.0 and 6.0 detail how the timings and settings for your heating and hot water can be changed.

3.2 THINK Controller

1. The THINK Controller displays important information about how the appliance is working and allows you to alter settings to configure the operation to your requirements.

2. This is normally located at the base of the appliance on the front cover. It can be removed from the appliance to act as a programmable room sensor when mounted in a wall cradle accessory. This then becomes a temperature sensor and programmer.

3. If your Ecogen appliance has been installed using the existing room temperature and time controls the installer should have made sure that the appliance programs for the central heating and domestic hot water are set to 24hr operation – see sections 7.1 and 7.4 - choose 'On' in both cases.

4. Refer to the instructions for the existing programmers for setting the timed periods and the room temperatures. The THINK Controller will display the boiler flow temperature and any errors see section 9 onwards.

3.3 Installing the THINK Controller as a Programmable Room Sensor

1. The Wall Cradle accessory is available in two formats.

a) Hard Wired i.e fixed to a wall, the screen illuminates upon operation.

b) Wireless Cradle, mounted and portable, with no permanent screen illumination.

2. The operation of both wireless and hard wired units are identical.

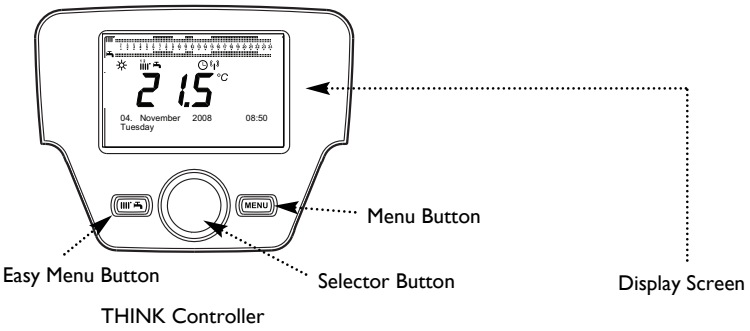
3. The Wireless Cradle is powered by three AA batteries located in the rear of the unit behind a slide down panel. If battery power is depleted a warning symbol appears on the display screen, replace the batteries.

3.4 5 LED Receiver

1. The 5 LED Receiver is fitted when the THINK Controller is removed and gives basic information about the state of the appliance from left to right:-

1st Green	-	Mains On
2nd Green	-	Communication Status
1st Yellow	-	Engine Burner On
2nd Yellow	-	Supplementary Burner On
Red	-	Fault Present

2. The Reset Button may be used to reset User Errors - see Section 11.0.



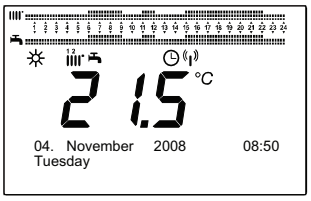
4.0 Setting the Time

4.1 Time Setting

The time, day, date and year can be adjusted using the THINK Controller as shown below.

STEP 1

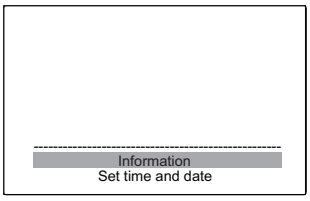
The basic display is shown. If the basic display is not showing, press the MENU button. (MENU) until the basic display is shown



STEP 2

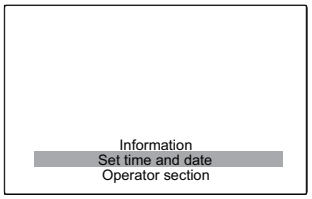
Press the MENU button.

(MENU)



STEP 3

Turn the Selector Button clockwise to highlight 'Set Time and Date'.



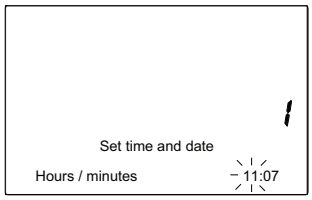
STEP 3

STEP 4

Press the Selector Button to select .

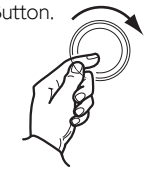
STEP 5

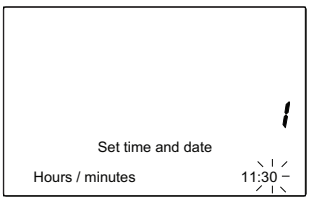
Press the Selector Button and the hour number flashes. Turn Button to the required hour.



STEP 6

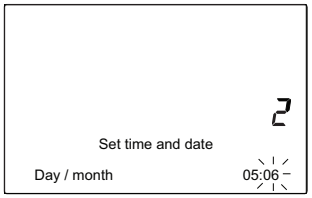
Press the Selector Button and the minute number flashes. Turn Button to the required minute. Press the Selector Button.





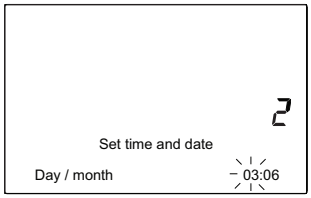
STEP 7

Turn the Selector Button clockwise until Day / month is shown. Press the Selector Button and the month number flashes. Turn Button to the required month.



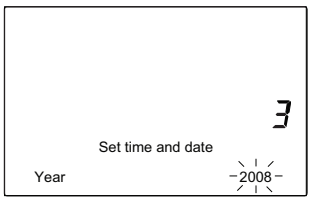
STEP 8

Press the Selector Button and the day number flashes. Turn Button to the required day. Press the Selector Button.



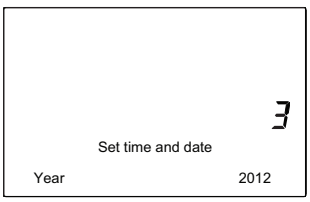
STEP 9

Turn the Selector Button clockwise until Year is shown. Press the Selector Button and the year number flashes. Turn Button to the required year.



STEP 10

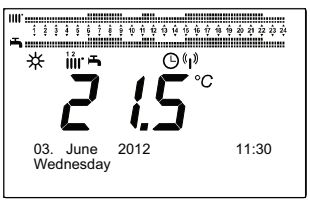
Press the Selector Button. Time setting is now complete.

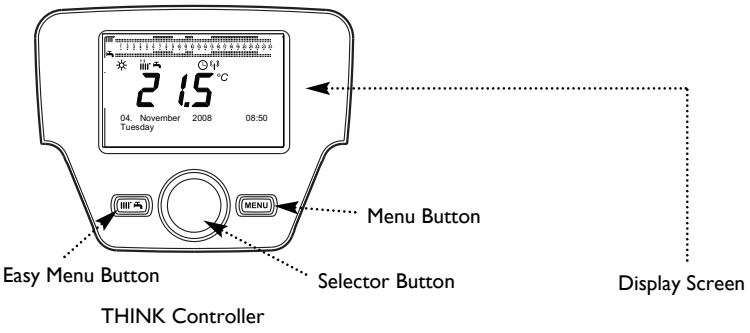


STEP 11

Press the MENU button twice to return to normal display screen.

(MENU)





5.0 Setting the Central Heating Times

5.1 Programming the Central Heating Times

The THINK Controller enables control of up to three periods a day, seven days a week.

There are 3 time programs preinstalled to aid reprogramming:-
Time program 1 is the default with 3 time periods - Mon-Sun, 6-9, 11-12 and 15-22.
Time program 2 has two time switch periods - Mon-Sun, 6-9 and 15-22.
Time program 3 has one time switch period 6-22.

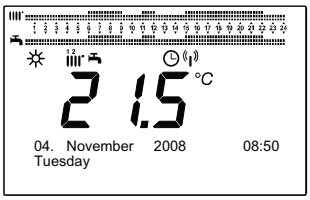
'Preselection' regimes are: Mon-Sun (Default) Mon-Fri and Sat-Sun or each day individually.

If there are two heating circuits with two THINK Controller's each room/floor must be programmed using the respective THINK Controller. Choose the relevant heating circuit at STEP 3.

When programming individual days, the opportunity to copy one day to another is offered (CH1 - Screen 515, CH2 - Screen 535).

STEP 1

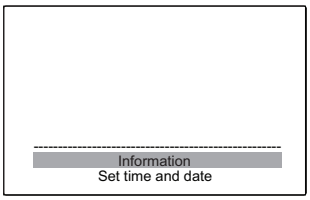
The basic display is shown. If the basic display is not showing, press the MENU button. (MENU) until the basic display is shown



STEP 2

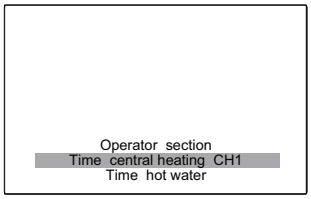
Press the MENU button.

MENU



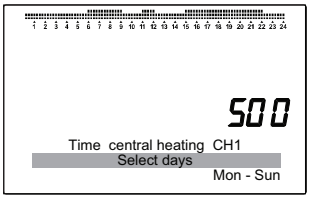
STEP 3

Turn the Selector Button clockwise to highlight 'Time central heating CH1'.



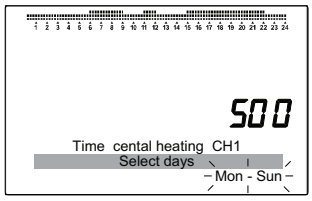
STEP 4

Press the Selector Button to select .



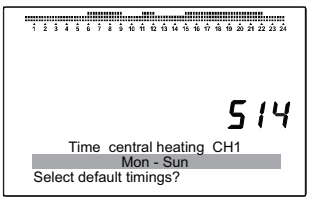
STEP 5

Press the Selector Button and the day / days regime flashes. Turn Button to the required day or days Mon-Sun, Mon-Fri, Sat-Sun
Mon, Tue, Wed, Thu, Fri, Sat, Sun
Press Button to select.



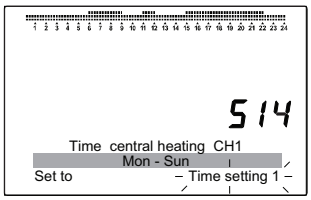
STEP 6

Turn the Selector Button one click clockwise.



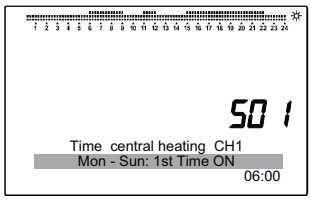
STEP 7

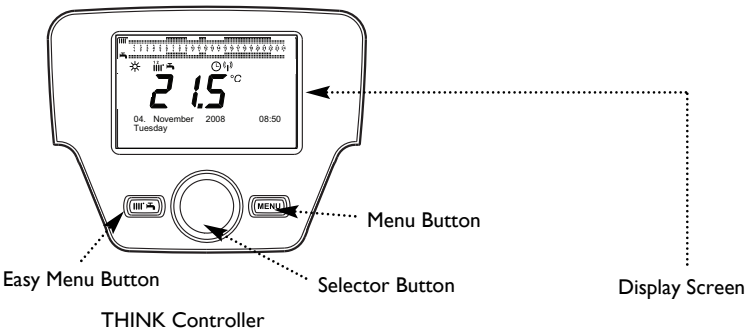
Press the Selector Button and the time program regime flashes. Turn Button to the 'Time setting 1'. Press Button to select and the screen goes back to STEP 6.



STEP 8

Turn the Selector Button one click clockwise.





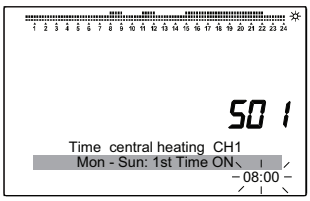
THINK Controller

5.0 Setting the Central Heating Times

5.1 Programming the Central Heating Times (cont)

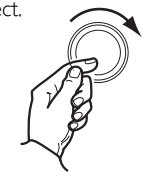
STEP 9

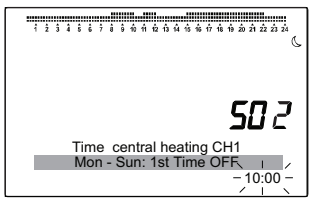
Press the Selector Button and the '1st Time ON' time will flash. Turn the Selector Button to the required time. Press Button to select.



STEP 10

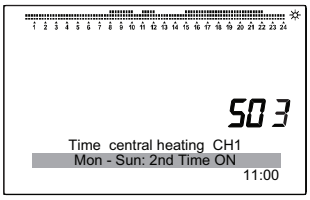
Turn the Selector Button one click clockwise and then press the Selector Button. The '1st Time OFF' time will flash. Turn the Button to the required time. Press the Button to select.





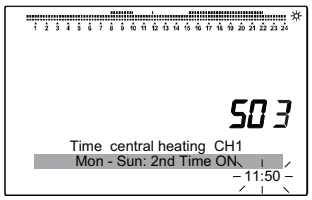
STEP 11

Turn the Selector Button one click clockwise.



STEP 12

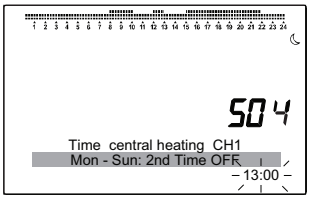
Press the Selector Button and the '2nd Time ON' time will flash. Turn the Selector Button to the required time. Press Button to select.



If --:-- appears when adjusting the ON/OFF Time it is because the ON is the same as OFF. If this is selected the Time period will disappear. A new Time period can be introduced by starting from 24.00 and turning anticlockwise.

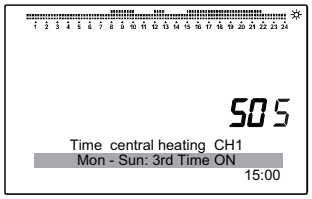
STEP 13

Turn the Selector Button one click clockwise and then press the Selector Button. The '2nd Time OFF' time will flash. Turn the Button to the required time. Press the Button to select.



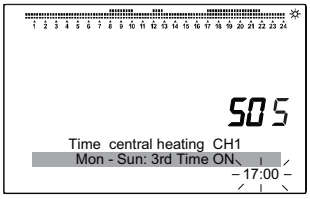
STEP 14

Turn the Selector Button one click clockwise.



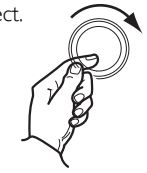
STEP 15

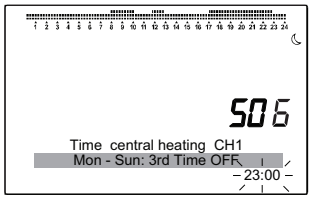
Press the Selector Button and the '3rd Time ON' time will flash. Turn the Selector Button to the required time. Press Button to select.



STEP 16

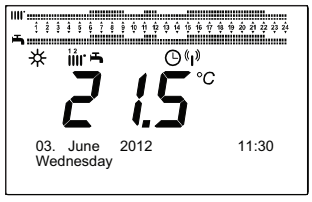
Turn the Selector Button one click clockwise and then press the Selector Button. The '3rd Time OFF' time will flash. Turn the Button to the required time. Press the Button to select.

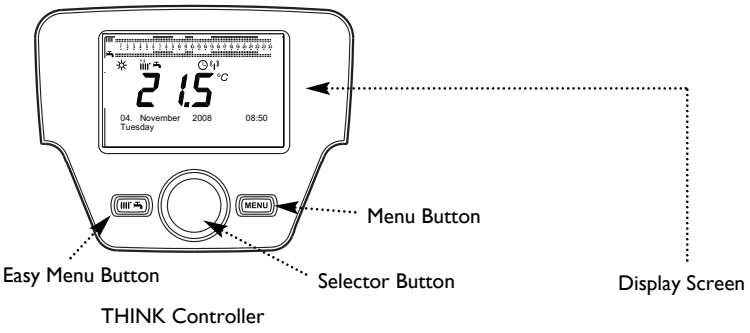




STEP 17

Press the MENU button twice to return to normal display screen.





6.0 Setting the DHW Times

6.1 Programming the Domestic Hot Water Times

The THINK Controller enables control of up to three periods a day, seven days a week.

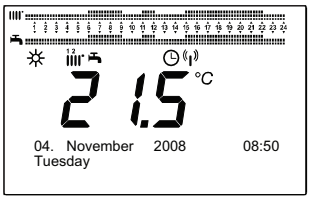
There are 3 time programs preinstalled to aid reprogramming:-
Time program 1 is the default with 3 time periods - Mon-Sun, 6-9, 11-12 and 15-22.
Time program 2 has two time switch periods - Mon-Sun, 6-9 and 15-22.
Time program 3 has one time switch period 6-22.

'Preselection' regimes are: Mon-Sun (Default) Mon-Fri and Sat-Sun or each day individually.

When programming individual days, the opportunity to copy one day to another is offered (screen 575).

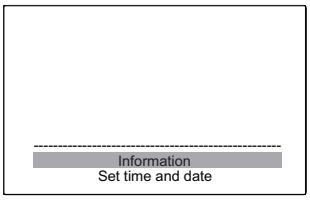
STEP 1

1. The basic display is shown. If the basic display is not showing, press the MENU button. MENU



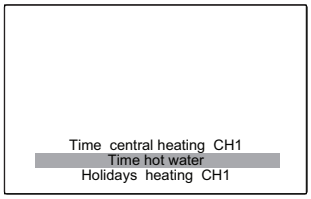
STEP 2

Press the MENU button. MENU



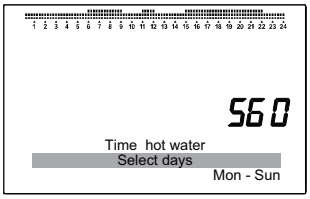
STEP 3

Turn the Selector Button clockwise to highlight 'Time hot water'.



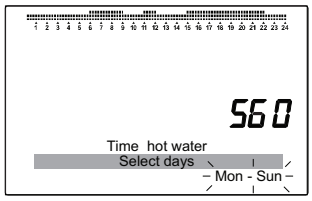
STEP 4

Press the Selector Button to select .



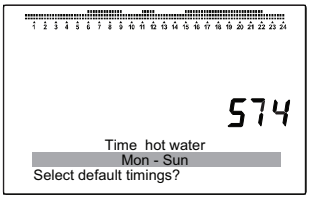
STEP 5

Press the Selector Button and the day / days regime flashes. Turn Button to the required day or days Mon-Sun, Mon-Fri, Sat-Sun, Mon, Tue, Wed, Thu, Fri, Sat, Sun Press Button to select.



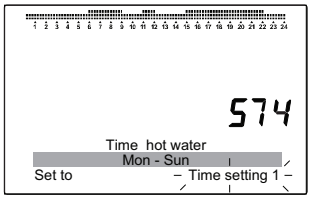
STEP 6

Turn the Selector Button one click clockwise.



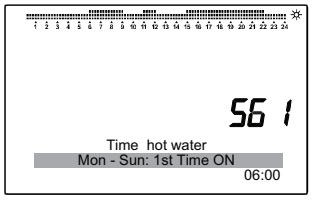
STEP 7

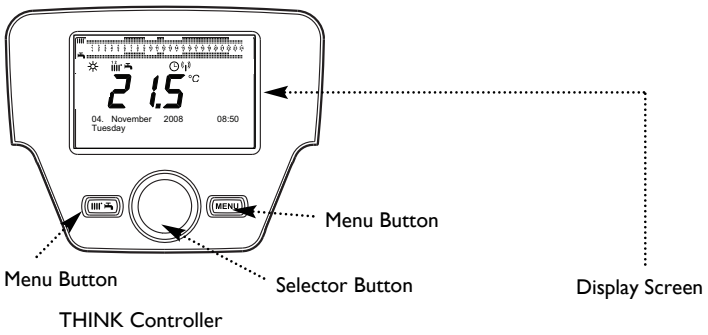
Press the Selector Button and the time program regime flashes. Turn Button to the 'Time setting 1'. Press Button to select and the screen goes back to STEP 6.



STEP 8

Turn the Selector Button one click clockwise.





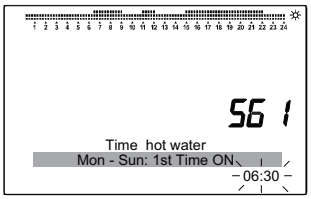
THINK Controller

6.0 Setting the DHW Times

6.1 Programming the Domestic Hot Water Times (cont)

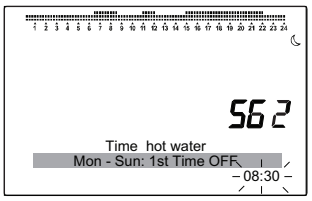
STEP 9

Press the Selector Button and the '1st Time ON' time will flash. Turn the Selector Button to the required time. Press Button to select.



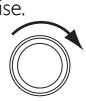
STEP 10

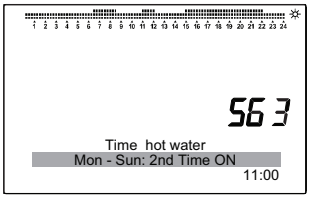
Turn the Selector Button one click clockwise and then press the Selector Button. The '1st Time OFF' time will flash. Turn the Button to the required time. Press the Button to select.



STEP 11

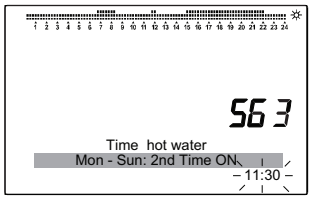
Turn the Selector Button one click clockwise.





STEP 12

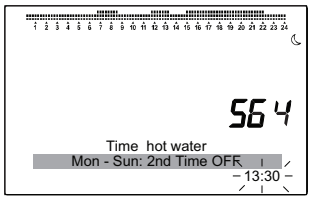
Press the Selector Button and the '2nd Time ON' time will flash. Turn the Selector Button to the required time. Press Button to select.



If --:-- appears when adjusting the ON/OFF Time it is because the ON is the same as OFF. If this is selected the Time period will disappear. A new Time period can be introduced by starting from 24.00 and turning anticlockwise.

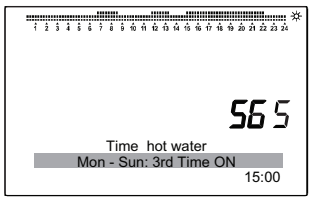
STEP 13

Turn the Selector Button one click clockwise and then press the Selector Button. The '2nd Time OFF' time will flash. Turn the Button to the required time. Press the Button to select.



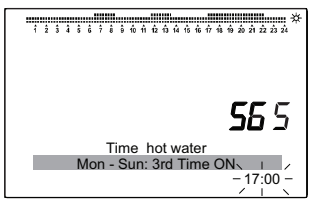
STEP 14

Turn the Selector Button one click clockwise.



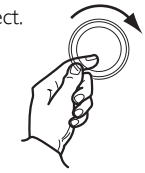
STEP 15

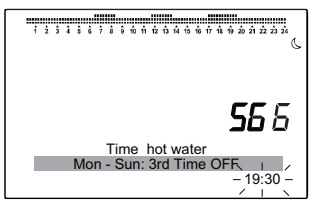
Press the Selector Button and the '3rd Time ON' time will flash. Turn the Selector Button to the required time. Press Button to select.



STEP 16

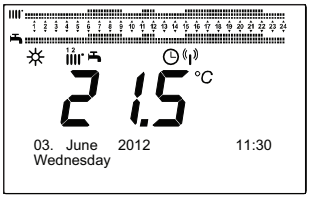
Turn the Selector Button one click clockwise and then press the Selector Button. The '3rd Time OFF' time will flash. Turn the Button to the required time. Press the Button to select.

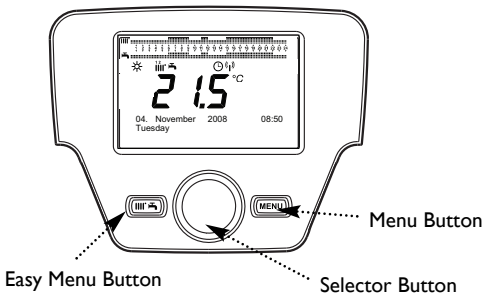




STEP 17

Press the MENU button twice to return to normal display screen.

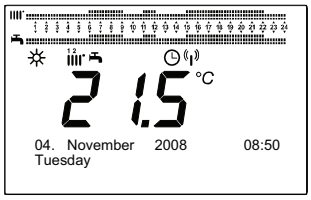




THINK Controller

STEP 1

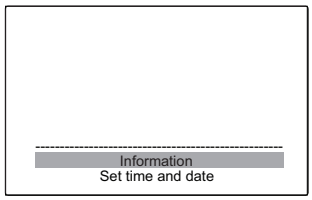
The basic display is shown. If the basic display is not showing, press the MENU button. (MENU) until the basic display is shown



STEP 2

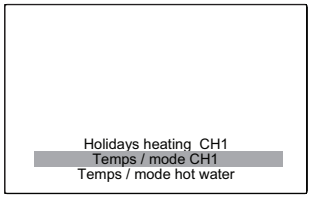
Press the MENU button.

(MENU)



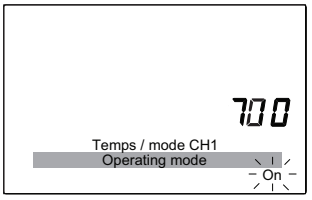
STEP 3

Turn the Selector Button clockwise to highlight 'Temps / mode CH1'.



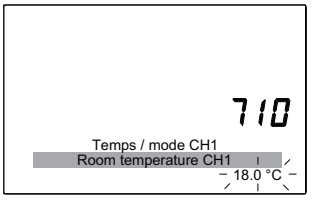
STEP 4 - For this example choose Comfort

Press the Selector Button twice and then turn the Selector Button to the required space heating mode i.e. On or Timed or Reduced or Off. Press the Selector Button to select.



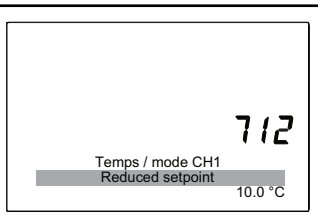
STEP 5

Turn the Selector Button until 'Room temperature CH1' is displayed. Press the Selector Button and the °C will flash, turn the Button to set the required °C and then press the Selector Button to select..



STEP 6

The Process for setting the Reduced setpoint is the same. When STEP 4 is reached choose Reduced and then continue with STEP 5 but turn Button to 'Reduced setpoint'.



NOTE: Press the MENU button twice to return to normal display screen. (MENU)

7.0 Mode Selection/Temp Adjustment

7.1 Selecting the Cental Heating Mode

1. There are 4 central heating modes: -

On	-	heating operates to keep the dwelling at the comfort setpoint chosen by the householder continuously ie. 24hr/day, initially set at 20°C.
Timed	-	heating operates to keep the dwelling at the comfort setpoint chosen by the householder according to the programme times, initially set at 20°C (min 10°C - max 35°C).
Reduced	-	heating operates to keep the dwelling at the reduced set point chosen by the householder continuously, initially set at 5°C (min 5°C - max 20°C).
Off	-	frost protection - heating operates to keep the dwelling above 5°C continuously.

2. The central heating mode can be set using any THINK Controller installed in the house.

3. To select the mode required: - from the main screen press the menu button.

4. Turn Selector Button to 'Temps / mode CH1'.

Press Button to select and scroll between: - Off – Timed – Reduced – On, press Button to select.

7.2 Further Information

1. The user must be aware that in the timed mode the THINK Controller is not inactive in between the programmed times, the frost protection/reduced temperature period is constantly in the background and will cause the appliance to come on if the room temperature falls below the reduced temperature setpoint (5° default) or 5°C during frost protection.

NOTE: Adjustment of the room temperature setpoint during these periods will result in a temporary change to the reduced temperature setting until the next timed period is activated.

2. The central heating may be switched on at any time by increasing the room temperature setpoint to a greater value than the indicated room temperature whether in or out of a programmed period. This setpoint change will remain active until the next programmed comfort period when the setpoint will revert to the permanent comfort setpoint (see Section 7.8).

7.3 Optimum start

Instead of the heating starting at the Programmed times the optimum start function ensures that the property achieves the required room temperature by the start of the programmed timed period.

The appliance 'learns' the heat up time of the building and reduces this forward shift in time to a minimum.

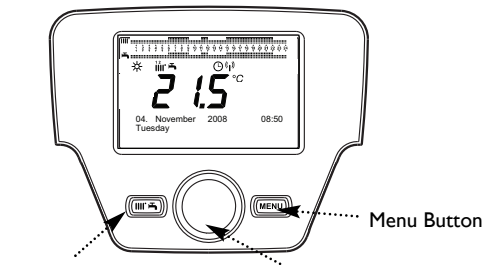
To enter the maximum forward shift desired: -

Press the Menu Button and scroll down to 'Temps / mode CH1'.

Press the Selector Button to select and scroll down to 'Optimum start control max'.

Press the Selector Button to select and scroll to select the maximum time in minutes.

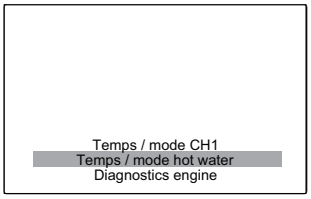
Press the Selector Button to confirm your choice.

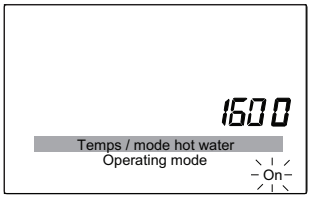


THINK Controller

DOMESTIC HOT WATER MODE

STEP 1 - Press the MENU button (MENU) and then turn the Selector Button clockwise to highlight 'Domestic hot water'.



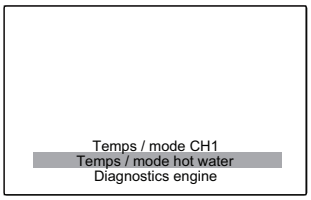


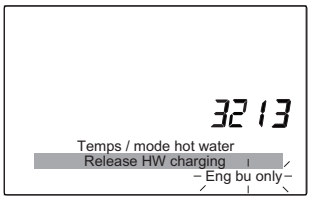
STEP 2 - Press the Selector Button to select .

STEP 3 - Press the Selector Button again and the On Off mode will flash. While flashing turn the Button to toggle between On and Off. Press Button to select.

DHW CYLINDER REHEAT TIMES
ALTERING BURNER RESTRICTIONS

STEP 1 - Press the MENU button (MENU) and then turn the Selector Button clockwise to highlight 'Temps/mode hot water'.





STEP 2 - Press the Selector Button to select .

STEP 3 - Turn the Selector Button again to highlight 'Release HW charging'. Press the dial knob to select. While flashing turn the Button to toggle between 'Eng bu only' and 'No restrictions'. Press Button to select.

7.0 Mode Selection/Temp Adjustment

7.4 Selecting the Domestic Hot Water (DHW) mode

1. There are 2 DHW modes: -

Off (Protection) - heating operates to keep the domestic hot water cylinder above 8°C continuously.

On (Timed) - heating operates to keep the domestic hot water at the comfort set point chosen by the householder according to the programme times, initially set at 65°C.

2. The DHW mode can be set using the THINK Controller.

3. To select the mode required: - from the main screen press the menu button, scroll down to 'Temps/mode hot water'.

4. Press Selector Button to select, select Operating mode by pressing the dial again, scroll between : - Off and On and select by pressing the Button.

7.5 DHW cylinder reheat times

1. The appliance is factory set so that only the engine burner is used to reheat the DHW cylinder. This is in order to maximise electricity generation. If this results in unsatisfactorily long reheat times then the supplementary burner can be used to reheat the cylinder as well and this will reduce the reheat times to roughly a third of those with engine burner only.

To switch the supplementary burner on for DHW heating: -
a) From the main screen press the menu button, scroll down to 'temps/mode hot water'.
b) Press the Selector Button to select and scroll down to 'Release HW charging'.
c) 'Eng bu only' will appear
d) Press the Selector Button to change, 'Eng bu only' will flash, scroll to change to 'No restrictions' and press the Button to select. This will allow the supplementary burner to light during DHW demands.
e) 'Eng bu only' may be reselected at any time.

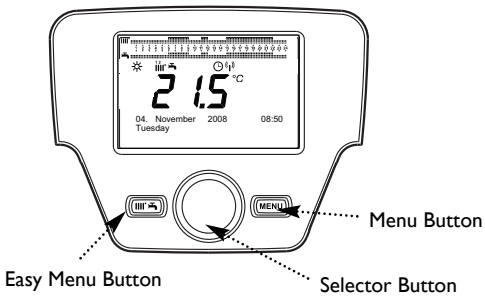
7.6 Adjusting the DHW Cylinder Temperature

1. If the DHW Cylinder is fitted with a temperature sensor, the cylinder setpoint temperature may be adjusted using the THINK Controller as follows:-

Press the easy menu button
Turn the Selector Button to highlight ' Hot water temp setpoint'.
Press the Selector Button to select.
Turn the Selector Button to change the temperature to the desired temperature.
Press the Selector Button to confirm.

The maximum setpoint temperature is 65°C

The main screen will return after a short while, otherwise press the menu button twice to return immediately.



THINK Controller

ROOM TEMPERATURE SETPOINT

STEP 1 - Turn the Selector Button and the temperature will appear. Turn the Selector Button again and whilst flashing keep turning the Button to display the required temperature.

STEP 2 - Press the Selector Button to select.

7.0 Mode Selection/Temp Adjustment

7.7 Hot Water Boost Function

1. Press Easy Menu Button - scroll to hot water boost and select.

2. 'Hot water boost on' is displayed briefly, then '301 manual control'. The cylinder is heated until satisfied. After using the control for any action the screen returns to '301 manual control'.

3. To remove this function, press and hold the Selector Button, 'quit special operation, yes' appears, the boost action is stopped.

NOTE: both engine and supplementary burners are brought on. Boost is activated even in standby. If the system operates a DHW priority, then any CH demand will be suspended until the cylinder reheat is satisfied.

7.8 Adjusting the Room temperature setpoint

1. The room temperature setpoint may be adjusted temporarily as long as the appliance is not in standby or protection mode.

2. From the main screen - turn the Selector Button until the desired temperature is displayed, press the Button to confirm.

3. If the temperature is being adjusted from the appliance connected to two heating circuits, the heating circuit must be chosen first.

4. Between the programmed times there is a minimum setback or reduced temperature which is set to 5°C (see Section 7.1 STEPS 1 to 6). This may be permanently changed to set a higher minimum temperature ie. 10°C or **temporarily** changed by turning the Selector Button between a programmed period and selecting the desired temperature. This facility may be used to heat the house outside the programmed periods.

5. The reduced temperature setting will revert to the permanently stored value at the beginning of the next programmed period.

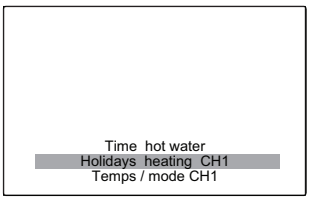
7.9 Anti-Legionella Function

1. When a DHW cylinder is fitted with a temperature sensor an anti-legionella function can be activated, so that at initial DHW charge and there after at regular intervals the cylinder is heated to destroy any legionella bacteria, the cylinder temperature is raised to 65°C.

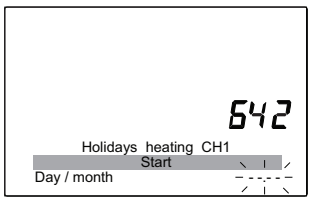
2. To invoke this option: -

- Press the Menu Button and scroll down to 'Temps mode hot water'.
- Press the Selector Button to select and scroll down to 'Legionella function'.
- Press the Selector Button to select - there is choice between periodically i.e. every so many days at a particular time or one a week on a certain day at a particular time.
- Scroll and choose between: - off/periodically/weekday.
- After choosing 'Periodically' scroll down to 'Legionella function periodically' press and scroll to choose the number of days between the Legionella function activation.
- After choosing 'weekday' scroll down to 'Legionella function weekday' press and scroll to choose the day of the Legionella function activation.
- Then scroll down 'Legionella function time' press and scroll to change and confirm new time by pressing the Selector Button.

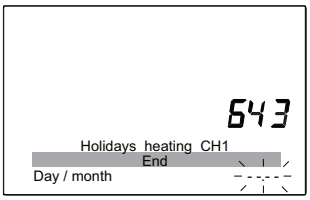
HOLIDAY MODE **STEP 1 -** Press the MENU button. MENU



STEP 2 - Turn the Selector Button to highlight 'Holidays heating CH1' and press the Button to select the start period.

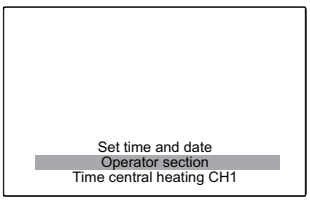


STEP 3 - Press the Selector Button and the Day/month starts flashing, turn the Button to required month and press Button to select and then repeat to select the day.

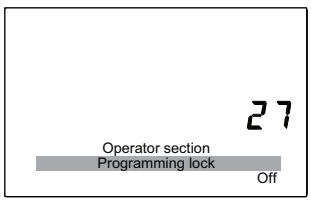


STEP 4 - Turn the Selector Button to highlight 'End' and press the Button. The Day/month starts flashing, turn the Button to required month and day as in STEP 3 to end the holiday period.

ACTIVATE PROGRAMME LOCK **STEP 1 -** Press the MENU button. MENU

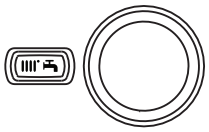


STEP 2 - Turn the Selector Button to highlight 'Operator section' and press the Button to select.

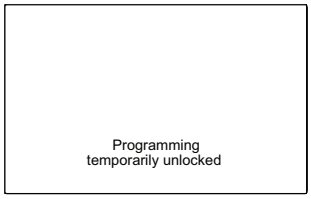


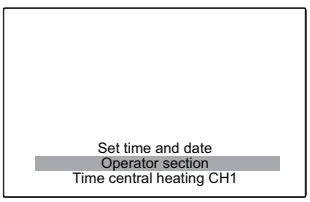
STEP 3 - Turn the Selector Button to highlight 'Programming lock' and press the Button to select. Turn the Button from 'Off' to 'On' and press the Button to select.

REMOVE PROGRAMME LOCK **STEP 1 -** Press the MENU button. MENU

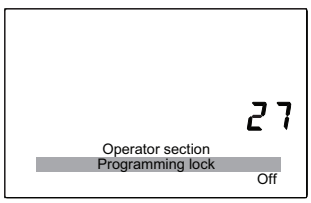


STEP 2 - Press and hold both the Easy Menu and Selector Button until 'Programming temporarily unlocked' appears





STEP 3 - Turn the Selector Button to highlight 'Operator section' and press the Button to select.



STEP 4 - Turn the Selector Button to highlight 'Programming lock' and press the Button to select. Turn the Button from 'On' to 'Off' and press the Button to select.

7.0 Mode Selection/Temp Adjustment

7.10 Holiday mode

1. When the holiday mode is activated the 'Off' (frost protection) mode is activated for the selected period see section 7.1. If the holiday mode is activated then the DHW is set to protection as well. If there is more than one heating circuit then the Holiday mode must be activated for all circuits to set the DHW to protection.

2. The Holiday mode is activated by using the menu button scroll down to 'Holiday heating CH1', press the Selector Button.

3. Press again to set the month scroll and select – (the display will start at 01,01) set the day scroll and select.

7.11 Programme Lock

1. There is a programme lock function available to stop the THINK Controller being either tampered with or accidentally altered.

2. After the programme lock has been activated, only the temporary setpoints, comfort, reduced temperature or the functions via the easy menu such as standby/operation or HW push are available for change by the user.

3. **To activate the programme lock: -**
a) Press the menu button to access 'Information', then scroll and press to choose 'Operator section', scroll to the programming lock option, press and scroll from 'Off' to 'On'. Confirm by pressing the Selector Button.

b) Viewing the THINK Controller settings is still possible, but when attempting to alter any parameters the screen will show 'Programme locked'.

4. **To remove the programme lock: -**
a) To temporarily unlock the THINK Controller press the menu button to access 'Information' then press and hold the easy menu and Selector Button until 'Programme temporarily unlocked' appears.

b) In this state any alterations can be made until returning to the standard screen when the programming lock is activated again.

c) **To remove the programme lock permanently: -** whilst temporarily unlocked, access the programme lock screen by pressing the menu button to access 'Information', then scroll and press to choose 'Operator section', scroll to the programming lock option, and press and scroll from 'On' to 'Off'. Confirm by pressing the Selector Button.

8.0 Contents of Other Functions

8.1 Viewing Information

The following information is also available by pressing the menu button and selecting 'information' by pressing the Selector Button, any error is displayed first then : -

1. Room temperature – °C.
2. Boiler temperature – °C.
3. State burner – 1+2 (1=engine, 2= supplementary burner on).
4. Power – Watts.
5. Energy to date – kWh.
6. Head temp actual value (of the Stirling engine) – °C.
7. Room temperature min. - Room Sensor only
8. Room temperature max. - Room Sensor only
9. Hot water temp (setpoint if tank sensor fitted) – °C.
10. State Hot Water.
11. State heating circuit CH1.
12. Telephone customer service.

8.2 Selecting Set time and date

The following information is also available by pressing the menu button and selecting 'Set time and date' by pressing the Selector Button.

1. Hours / minutes
2. Day / month
3. Year

8.3 Selecting Operator section

The following information is also available by pressing the menu button and selecting 'Operator section' by pressing the Selector Button.

1. Change language
2. Programme lock – Off/On.

8.4 Selecting Time central heating CH1

The following information is also available by pressing the menu button and selecting 'Time central heating CH1' by pressing the Selector Button.

1. Select days
2. Mon-Sun,Mon-Fri,Sat-Sun,Mon,Tue,Wed,Thu,Fri,Sat,Sun
3. Select default timings – programmes 1/2/3
4. 1st Time ON -- hrs/mins
5. 1st Time OFF -- hrs/mins
5. 2nd Time ON -- hrs/mins
6. 2nd Time OFF -- hrs/mins
7. 3rd Time ON -- hrs/mins
8. 3rd Time OFF -- hrs/mins
9. Copy to - Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday.

8.5 Selecting Time hot water

The following information is also available by pressing the menu button and selecting 'Time hot water' by pressing the Selector Button.

1. Select days
2. Mon-Sun,Mon-Fri,Sat-Sun,Mon,Tue,Wed,Thu,Fri,Sat,Sun.
3. Select default timings – programmes 1/2/3
4. 1st Time ON -- hrs/mins
5. 1st Time OFF -- hrs/mins
6. 2nd Time ON -- hrs/mins
7. 2nd Time OFF -- hrs/mins
8. 3rd Time ON -- hrs/mins
9. 3rd Time OFF -- hrs/mins
10. Copy to - Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday.

8.6 Selecting Holidays heating CH1

The following information is also available by pressing the menu button and selecting 'Holidays heating CH1' by pressing the Selector Button.

1. Start – Day / month
2. End – Day / month

8.7 Selecting Temps / mode CH1

The following information is also available by pressing the menu button and selecting 'Temps / mode CH1' by pressing the Selector Button.

1. Operating mode – Off/Timed/Reduced/On
2. Comfort set point -- °C.
3. Reduced set point -- °C.
4. Optimum start control max – mins (0 - 360mins).

8.8 Selecting Temps / mode hot water

The following information is also available by pressing the menu button and selecting 'Temps / mode hot water' by pressing the Selector Button.

1. Operating mode - Off / On
2. Hot water temp setpoint – °C.
3. Legionella function – Off / Periodically / Fixed weekday
4. Legionella funct periodically - 1 / 2 / 3 / 4 / 5 / 6 / 7
5. Legionella funct weekday - Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday.
6. Legionella funct time -- hrs/mins.
7. Release HW charging – No restrictions / Eng bu only.

8.9 Service/Special operation

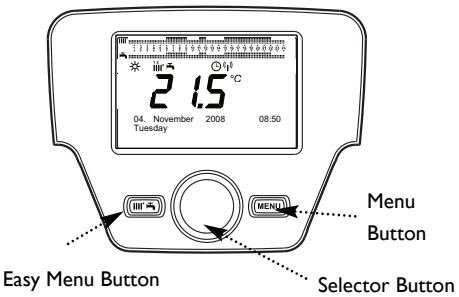
1. Time since maintenance - -- months

2. Telephone Number - Customer Service

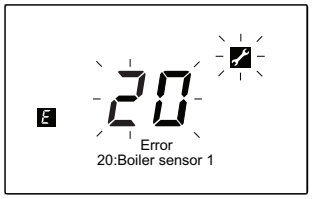
8.10 Selecting Diagnostics engine

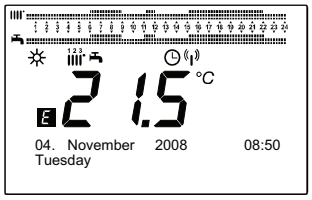
The following information is also available by pressing the menu button and selecting 'Diagnostics engine' by pressing the Selector Button.

1. Power – W
2. Energy to date – kWh
3. Energy since reset - kWh
4. Reset energy counter - no / yes

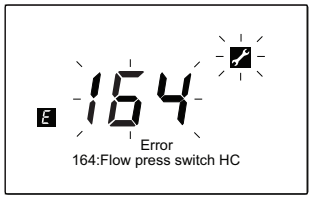


THINK Controller

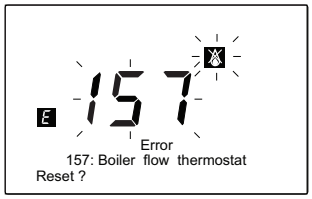


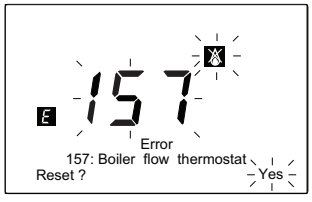


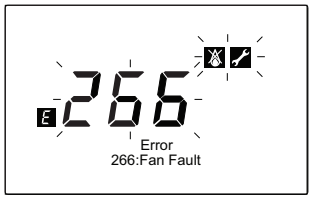
THINK Controller	5 LED-red light	Reset Type
	Flashes	Auto
	Flashes	User
	On	Service



To reset - Press the Selector Button and the Yes / No mode will appear. While flashing turn the Button to toggle between Yes and No. Select Yes and press the Selector Button to select.







9.0 Resetting the Boiler

9.1 Exceptional conditions

1. In exceptional cases, the display will show an error screen see diagram opposite.

2. With the following information: -
   An error number.
   a short description of the error.
   The display may or may not show a flashing spanner, a flame crossed out or both depending on whether the unit is on the appliance or the wall.

3. Pressing the menu button will return the THINK Controller to the standard display which will now show the following symbol - E which indicates that an error or fault has occurred in the appliance. After 1 minute the display will automatically revert to the error screen.

4. Press the menu button twice to revert to the error display immediately. A list of error codes is shown in section 11.1. This list contains both user reset and automatic reset codes. Automatic codes are given here as they are capable of clearing automatically and do not necessarily indicate that a service visit is required.

9.2 Automatic reset

1. If a flashing spanner is shown on the THINK Controller the error may reset once the condition has cleared. Many of these automatic reset errors are connected with temperature sensors of both the system and the appliance and once the appliance has cooled it may restart. If the problem persists where the same error code is repeatedly displayed or the error will not clear you should call for a service engineer.

9.3 User reset

1. A user reset can only be carried out on the THINK Controller when it is not a Room Sensor.

2. To perform a user reset:-

a) on the 5 LED Receiver, press the reset button at the bottom of the unit, after a few seconds the red flashing LED will go out.

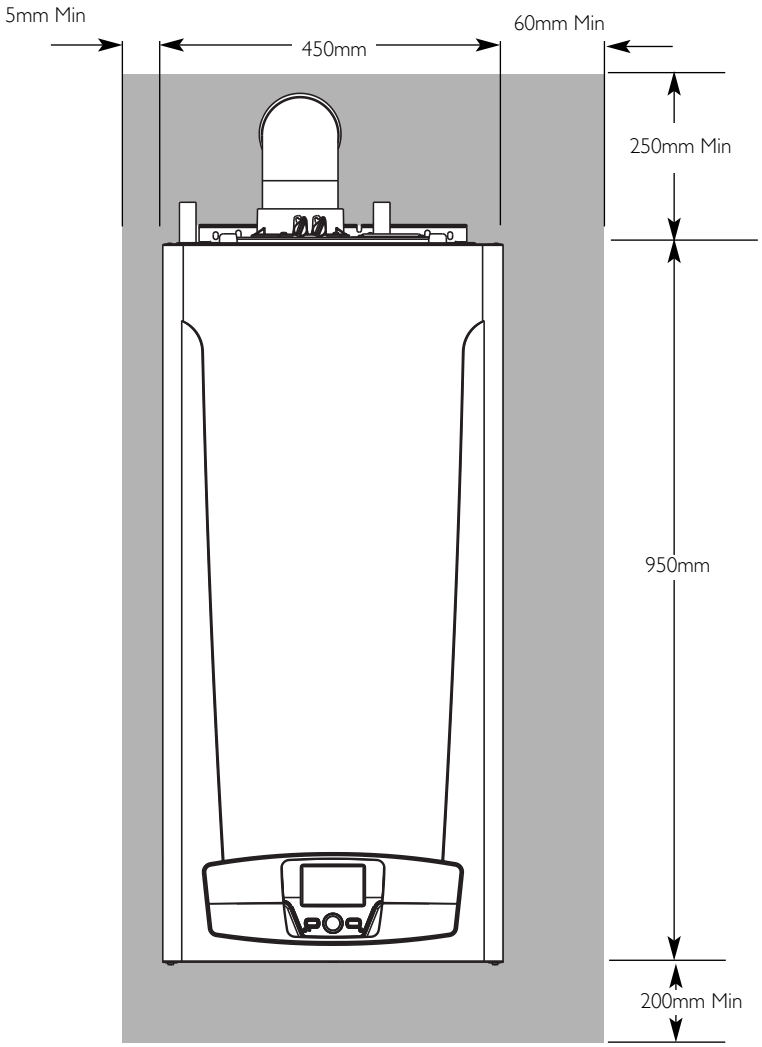
b) on the THINK Controller reset appears, press the Selector Button twice, after a few seconds the error symbol should disappear.

3. The error will clear and the appliance will restart if there is a demand for heat as long as the error condition has cleared. The user error codes give an indication of possible problems which the user may be able to rectify such as accidental isolation of either the gas supply (error 261and 262) or the central heating circuit, pump problems etc (error 164 and 274).

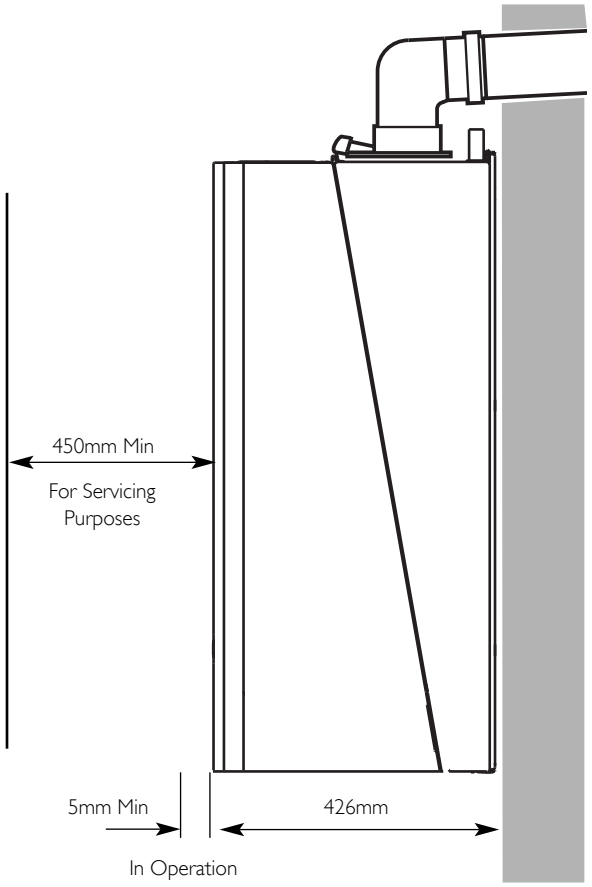
4. If the error returns the fault condition is still present.

9.4 Service reset

When a flashing spanner is accompanied by a crossed out flame symbol on the appliance, a fault has occurred which requires the presence of a service engineer. When ringing the Heateam Service Department to request a service engineer please quote the error code and accompanying message.



Ensure that there is adequate clearance for the lifting equipment. (Genie GL-8 lifting equipment dimensions are 64cm wide x 175cm high x 95cm deep).



10.0 Clearances

10.1 For your Safety

1. This appliance must have been installed in accordance with the manufacturer's instructions and the regulations in force.

2. Any modification that may interfere with the normal operation of the appliance without express written permission from the manufacturer or his agent could invalidate the appliance warranty. In GB this could also infringe the Gas Safety (Installation and Use) Regulations.

GB - Heating Industry definition meaning England, Scotland, Wales, Northern Ireland, Isle of Man and the Channel Isles

3. Your boiler must not be operated without the casing correctly fitted.

4. Do not interfere with any sealed components on this boiler.

5. Take note of any warning labels on your boiler.

6. Your boiler should have the following minimum clearances for Safety and Maintenance :-

Top	- 200mm
Bottom	- 200mm
Left side	- 5mm
Right Side	- 60mm
Front	- 5mm (In Operation)
	- 450mm (For Servicing)

7. If your boiler is installed in a compartment, do not use it for storage purposes. Do not obstruct any purpose provided ventilation openings.

8. Flammable materials must not be stored in close proximity to your boiler.

9. Avoid skin contact when your boiler is in operation, as some surfaces may get hot e.g. pipework.

10. Ensure that the flue terminal, outside the house, does not become damaged or obstructed, for example by foliage.

11. It is important that the condensate drain system is not blocked, modified or damaged in any way as this would affect the operation of your boiler. Your installer should have insulated any exposed pipework.

11.0 Error Codes

11.1 List of Error Codes

In the table below: - PCB = Main Control Board, BCU = Burner Control Unit.

UR = User Reset, AR = Automatic Reset, ARP = Automatic Reset after Power Down

NOTE: An automatic reset is only done if the fault condition has cleared.

Error code: Display	Description	Lockout/Reset action	
		Eng	Sup
10: Outside sensor	Fault outside temp sensor1	AR	AR
20: Boiler flow sensor	Fault boiler flow temp sensor	AR	AR
40: Boiler return sensor	Fault return temp sensor boiler	AR	AR
50: DHW tank sensor	Fault DHW1 sensor	AR	AR
60: Room sensor 1	Fault room temp sensor HC1	AR	AR
65: Room sensor 2	Fault room temp sensor HC2	AR	AR
83: BSB short-circuit	Boiler system bus short-circuit	AR	AR
84: BSB address collision	More then 1 room units are assigned to the same HC Assign one of them to HC2 or assign QAA7x not as room unit	AR	AR
85: Radio communication	Communication to radio device interrupted	AR•	AR•
95: Time of day invalid	The real time clock unit detected corrupted time of day.		
96: Minor SW failure	Failure in Class B-SW: Stack overflow or program sequence failure	AR	AR
127: Legionella temperature	Legionella temperature not achieved within 48 hours	AR+	AR+
157: Boiler Flow Overheat stat	Boiler flow overheat thermostat / safety chain open	UR	UR
158: Condensate	Condensate switch of safety chain opened	UR	UR
164: Flow	Intermitent Low flow or faulty flow detector	AR	AR
257: Pack sensor	Fault pack temp sensor		
258: Pack over- temp	Internal ambient temperature to high	AR	AR
259: CJC sensor	Fault cold junction compensation sensor	AR	
261: Loss of Engine flame	No flame after five ignition tries in Engine	UR	
262: Loss of Supplementary flame	No flame after five ignition tries in Supplementary		UR
263: Engine BCU failure	Multiple communication request of Engine Burner Control Unit unsuccessful. 1) Failure caused by BCU 2) BCU Communication Timeout on Main Control Board	 ARP AR	
264: Supp. BCU failure	Multiple communication request of Supp. Burner Control Unit unsuccessful. 1) Failure caused by BCU 2) BCU Communication Timeout on Main Control Board		 ARP AR
270: excessive temp. diff.	Excessive max temperature difference across the heat exchanger		
	during 5 minutes or excessive limit temperature difference. If temperature difference fell below (threshold - switching differential boiler): automatic reset - when the maximum setting was exceeded immediately - when the limit value was exceeded after 10 minutes	 AR	 AR AR 10'
274: Dry fire protection	7 l/min boiler flow not detected after 4 minutes	UR	UR
278: Max Temp Rise	Maximum flow temperature rise exceeded, automatic reset after 10 minutes		AR 10'

• After 10 minutes or after down power (ARP)

+ Will clear message if 65°C is achieved - does not inhibit appliance on.

UR = User Reset, AR = Automatic Reset, ARP = Automatic Reset after Power Down

NOTE: An automatic reset is only done if the fault condition has cleared.

11.1 List of Error Codes (cont)

Error code: Display	Description	Lockout/reset action Eng	Sup
280 : Engine dome overtemp	Engine dome overtemp has operated	AR	
282: G83/ENS/G1M	G83/ENS module has detected an unhealthy mains condition	AR	
285: Alternator Short	Power monitor IC has detected a short-circuit condition	AR	
287: Eng head under temp	Engine head temperature thermocouple measurement below 103 degrees C when the CX relay is energised	AR	
298: False flame engine	Ionisation probe of engine burner detected false flame	AR	
299: False flame supplementary	Ionisation probe of supplementary burner detected false flame		AR
300: Eng head under temp	Engine head control temperature less than 150 degrees C when CX relay is energised	UR	
301: Eng head over temp	Engine head control temperature greater than 540 degrees C	AR	
302: Eng head thermocouple	Magnitude of the difference between the engine head control and limit thermocouples is greater than 100 degrees C	UR	
303: Control thermocouple	Engine head control thermocouple failure	UR	
304: Limit thermocouple	Engine head limit thermocouple failure	UR	
309: Power fail detection	Power failure to fan detected 24v dc supply	AR	
310: Power monitor comm.	No data received from the power meter IC in the last 10 seconds or the power monitor failed to register with the EGC microcontroller within 10 seconds of power up	AR	
311: EGC comm. failure	Communication timeout or communication failure	AR	
400: Flow dir heatgen	Return temperature > flow temperature for longer than 3 minutes	UR	UR
421: Eng bu exc temp diff h'ex	Engine burner excessive temperature difference across the heat exchanger	AR	
422: BCU Eng bu inconsistent	Transmitted state of the engine burner BCU isn't consistent	AR	
423: BCU Supp bu inconsistent	Transmitted state of the supplementary burner BCU isn't consistent		AR
424: Rep. loss of flame Eng bu	Repeated loss of flame engine burner	UR	
425: Rep. loss of flame Supp bu	repeated loss of flame supplementary burner		UR

Section 11.2 Error Codes:- Reset Advice

This is a shortened list of the error codes, which will be displayed on the THINK Controller. If more than one error is active, the one with the higher priority or the one that appeared first will be displayed.

Error codes 157,274,261,262 and 300 can be reset by the user by pressing the user reset button for 2 seconds, turning the Selector Button to alter the flashing NO to a YES and then pressing the Selector Button. After a few seconds the error should clear enabling a restart of the appliance.

Errors 261 and 262 may indicate a problem with the gas supply.

Errors 157,164,274 and 300 may indicate a problem with the central heating water fill or pump. If the problem persists contact the installer with the error code.

Error 158 indicates a possible blockage in the condense drain.

Error codes 10 through to 99 (except 97) are linked to installation and commissioning of your system and as such you should contact your installer to complete commissioning.

Error codes that are shown as automatic reset will disappear once the fault has cleared. The appliance will restart if there is a demand except in the case of errors 263 and 264 when the appliance must be switched off and on again to enable a restart.

All other error codes indicate a fault condition, which will require the attention of a service engineer.

Warning !

If you smell gas

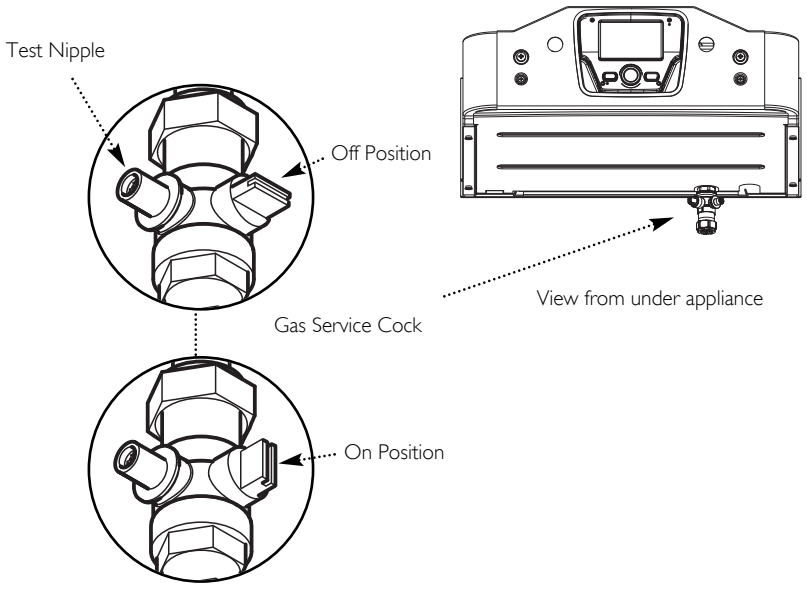
Do not operate light switches
Do not operate any electrical equipment
Do not use a telephone in the hazardous area
Extinguish any naked flame and do not smoke
Open windows and doors in the hazardous area
Turn off the gas supply at the meter
Warn any other occupants and vacate the premises
Telephone the National Gas Emergency Service on:-
0800 111 999

Faulty boiler

If it is known or suspected that a fault exists on the boiler, it must not be used until the fault has been corrected by a competent person.

IMPORTANT

If the boiler operates on LPG (Propane). Familiarise yourself with any control and isolation valves. If in doubt consult your installer about the operation of these devices.



12.0 Care of the Boiler

12.1 Cleaning the Outer case

The painted panels should be wiped with a damp cloth and then dried completely. **DO NOT USE ABRASIVE CLEANING AGENTS.**

12.2 Maintenance

1. The appliance MUST be serviced annually by a Baxi authorised engineer.

2. Before electrically isolating the appliance: remove all demands for heat and ensure the engine has disconnected from the grid. (Power = 0 kW) This will protect the engine from the stresses produced by disconnecting during electricity generation.

12.3 Condensate drain

The condensate drain, located at the bottom of the appliance, must not be modified or blocked. Blockage will cause the appliance to shut down.

12.4 Protection & Precaution

1. The appliance incorporates frost protection for itself only, fitted as standard. If the system has a THINK Controller configured as a Room Sensor mounted in a cradle on a wall then the central heating system will also be protected.

2. In cold weather, if you are going away, turn the appliance off at the time switch ONLY. Leave the mains supply switched ON. This will ensure protection by the frost thermostat. Alternatively use the Holiday Mode (see Section 7.9).

3. If a system frost thermostat has been fitted (your installer will be able to advise you), then to operate correctly and protect your system, the gas and electricity must be left on and the appliance set in the central heating mode.

4. The boiler incorporates an integral pump protection feature which continually monitors the time since the pump last operated. To prevent seizure, the pump will operate for approximately 1 minute if it has not run in the last 24 hours.

12.5 Fault Indication

1. If a fault occurs on the boiler an error code may be shown on the facia display.

12.6 In an Emergency

If a gas leak occurs or is suspected, the boiler can be isolated at the inlet valves as follows;

1. Using a suitable open ended spanner, turn the square nut on the gas tap through 90° (1/4 turn) in a clockwise direction to isolate the gas supply at the boiler.

2. Call your Installer or Service Engineer as soon as possible.

13.0 Legislation

13.1 Installation, Commissioning, Service & Repair

1. This appliance must be installed in accordance with the manufacturer's instructions and the regulations in force. Read the instructions fully before installing or using the appliance.

2. In GB, this must be carried out by a competent person as stated in the Gas Safety (Installation & Use) Regulations.

3. **Definition of competence:** A person who works for a Gas Safe registered company and holding current certificates in the relevant ACS modules, is deemed competent.

4. IN IE (Eire), this must be carried out by a competent person as stated in I.S. 813 "Domestic Gas Installations".

All Gas Safe registered engineers carry an ID card with their licence number and a photograph. You can check your engineer is registered by telephoning 0800 408 5500 or online at www.gassaferegister.co.uk

The boiler meets the requirements of Statutory Instrument "The Boiler (Efficiency) Regulations 1993 No 3083" and is deemed to meet the requirements of Directive 92/42/EEC on the energy efficiency requirements for new hot water boilers fired with liquid or gaseous fuels:-

Type test for purpose of Regulation 5 certified by:
Notified Body 0087.

Product/Production certified by:
Notified Bodies 0086.

For GB/IE only.

13.2 Benchmark Commissioning Checklist

1. Please ensure that the installer has fully completed the Benchmark Checklist on the inside back pages of the installation instructions supplied with the product and that you have signed it to say that you have received a full and clear explanation of its operation. The installer is legally required to complete a commissioning checklist as a means of complying with the appropriate Building Regulations (England and Wales).

2. All installations must be notified to Local Area Building Control either directly or through a Competent Persons Scheme. A Building Regulations Compliance Certificate will then be issued to the customer who should, on receipt, write the Notification Number on the Benchmark Checklist.

3. This product should be serviced regularly to optimise its safety, efficiency and performance. The service engineer should complete the relevant Service Record on the Benchmark Checklist after each service.

4. The Benchmark Checklist may be required in the event of any warranty work.

13.3 Contact the Electricity Provider

1. Both the Distribution Network Operator (DNO) and your Electricity Provider need to be informed that an electricity generator has been installed at your address. Usually the installer will inform the DNO. As the householder you should notify the Electricity Provider and arrange for a feed-in tariff to compensate you for the unused electricity that your appliance has generated and fed back into the grid. If your electricity meter does not already register reverse flows then the provider will have to arrange for new metering.

NOTE: See also
www.baxi.co.uk/products/get-fit-with-baxi-ecogen

14.0 Notes

Please complete the boxes below

Serial Number

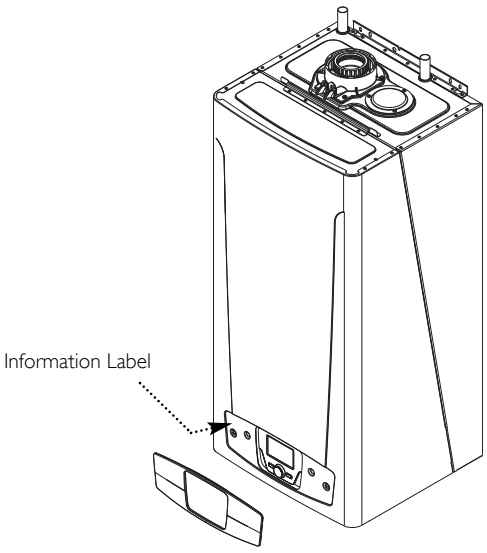
Electricity Provider .....

Notified Date .....

Date of Installation / Commissioning, if different

D D M M Y Y

Installer Details (name, address and contact number(s))



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e&oe

PART OF BDR THERMEA

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